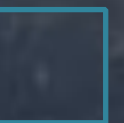


CDS Plans and challenges

December 1, 2020

Mark Allen - Director CDS



□ Plans 2020-2021

Continuation of core work of building CDS content and operating services

Immediate topics:

- Managing with the current continuing uncertainty.
- Return to the ObAS site - when we can...
- Continue to adapt the way of working - *the experience of the 2nd confinement is different to the first...*
- Recognise all the efforts !!
- Plan for a return to a changed “normal” in 2021 with different rhythms.
 - Tele-working (up to 2 days for various roles).
 - Benefit from our investments in videoconferencing etc.
 - Appreciate how precious the in-person interactions are for our work
 - Expect a global changed approach to travel / missions



□ Plans 2020-2021

Continuation of core work of building CDS content and operating services

- **CDS service/ingestion improvements - address the evolution of the Dictionary of Nomenclature**
- **Continue to improve DJIN**
- **Support the bibliographic team - longer term planning made possible by consolidation of Documentalist and CDI Engineer positions. - High priority on support of Documentalist work**

□ Plans 2020-2021

- **CDS infrastructure**

- First moves into the UNISTRA data centre
- Make use of large Virtual Machine servers for planned duplications in UNISTRA data centre - learn from gradual transition
- Continue investments in hardware - servers (*well supported*)
 - Plan for major upgrades well in advance
- Continue program of workstation improvements
 - (laptops / desktops / monitors as necessary)
 - also for mobile / multi-media to preparing video tutorials, and for virtual conferences - e.g AAS 2021 !!

- **Disaster Recovery Plan:**

- Assess: *What did we learn?*



□ Plans 2020-2021

- **CDS Service Developments.** *(From yesterday's presentations)*
 - Progress on the new X-Match prototype
 - Progress on New Sesame
 - Aladin Lite v3.
 - SIMBAD Web interface / APIs
 - SIMBAD infrastructure to synchronise clients
 - SIMBAD object types
 - Gain experience with the dashboard monitoring
 - Vizier - dealing with even larger data sets
 - More python support



□ Plans 2020-2021

- **Interactions with Journals: A&A, AAS, MNRAS**
 - Following excellent A&A meeting in 2020
 - LISA conference - hopefully in-person meetings
 - AAS - regular interaction with AAS publishing
 - Topic : Data Management Plans (DMP) and need for certified repositories
- **Interactions at national level CNRS-INSU, networks etc.**
- **Publication: CDS papers**
 - ADASS papers, LISA papers
 - Follow-on papers highlighting innovations
 - Reference paper for SIMBAD a priority!



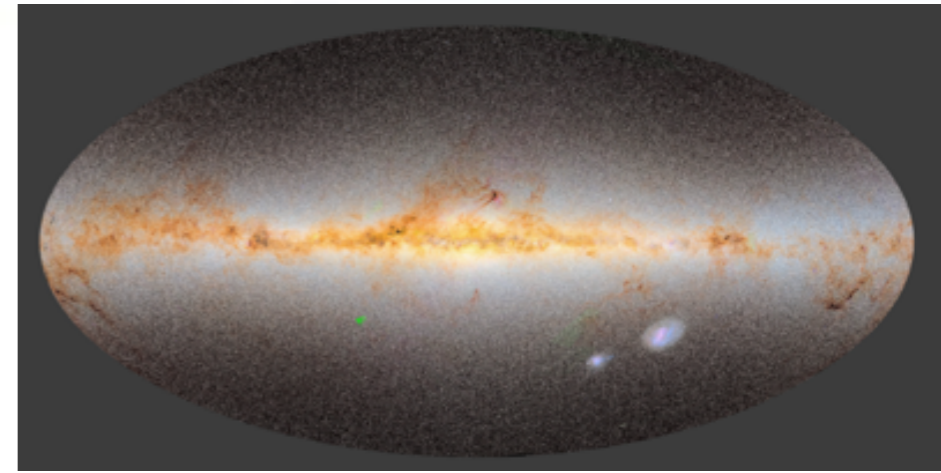
□ Plans 2020-2021

Specific topics for Users:

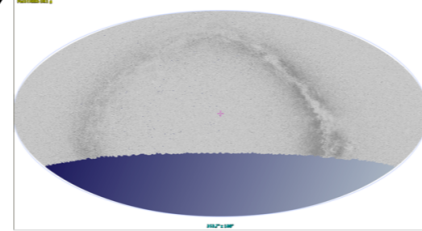
- Advertise VizieR ‘*Make your data Visible*’
- Advertise ‘*Your article at CDS*’
- Textual search in VizieR
- The VizieR author submission interface
- The use of VizieR DOIs
- HIPS2FITS and hipsgen
- Aladin Desktop manual - aiming for early 2021
- Local at ObAS - activities targeted for the many new postdocs - Advanced use of CDS tools, feedback etc.
- Virtual Observatory Schools - ESCAPE, (possibly others)



□ Important data sets in 2020-2021



- **ESA - GAIA EDR3** - *Thursday!*
 - Like for DR2: *Gaia@CDS: VizieR, TAPVizieR, X-Match, Aladin*
 - and in 2021 - *SIMBAD*
- **Pan-STARRS DR2 ***
- **SDSS DR16 ***
- **ESO Public surveys** - continue dedicated effort for catalogues and HiPS data sets
- **GPS1 +**
(Extended Gaia-PS1-SDSS proper motion catalog)
- **others...**



□ Plans 2020-2021

Selected Events:

- AAS meeting - virtual CDS booth 11-15 Jan 2021
- IVOA - 5 day meeting virtual May 2020
- LISA conference June 2021
- EAS - European Astronomical Society 28 June - 02 July 2021
 - CDS booth (if possible)
 - Special session: *"Legacy and stewardship of astronomical archives towards multi-instrument, multi-wavelength and multi-messenger science"*.
 - CDS and ESCAPE related presentations to be proposed
- ADASS/IVOA - planned for Cape Town (Oct/Nov 2021)



□ Policy Landscape changes

- **Follow all the relevant Open Science and astrophysics developments as necessary**
- **Update of National Infrastructure Roadmap**
 - Expect application procedures to start early 2021
- **Preparation of CDS Strategic Plan — for 2021/22**
 - For the HCERES exercise - next period 2023-2027
 - Input / expertise of all CDS staff needed!
 - As part of the ObAS response

Important to be taken into account as a Scientific Research Infrastructure!!



□ CDS Strategy

- **Constantly evolving** — based on scientific needs
- In 2020 — focused on responding to immediate issues
- **Main strategy** for core services is well established:
 - Pursue the CDS mission at the highest possible level
 - Science-driven Data Centre for “reference” data
 - Spirit of Open Science, and application of FAIR principles
- **Themes**
 - Reinforcement of core mission** — trusted reference data centre
 - Enabling science with the CDS services** — supporting specific scientific projects, direct support of astronomers, and development of the CDS science team
 - Engagement with the astronomy community**
 - Adaptation and innovation** — responding to science needs and increasing volume
 - Building on success of CDS by maintaining specialised staff profiles & teamwork**
- Strategy / plan to be prepared for HCERES exercise 2021/22 for 2023-27 period

□ Virtual Observatory

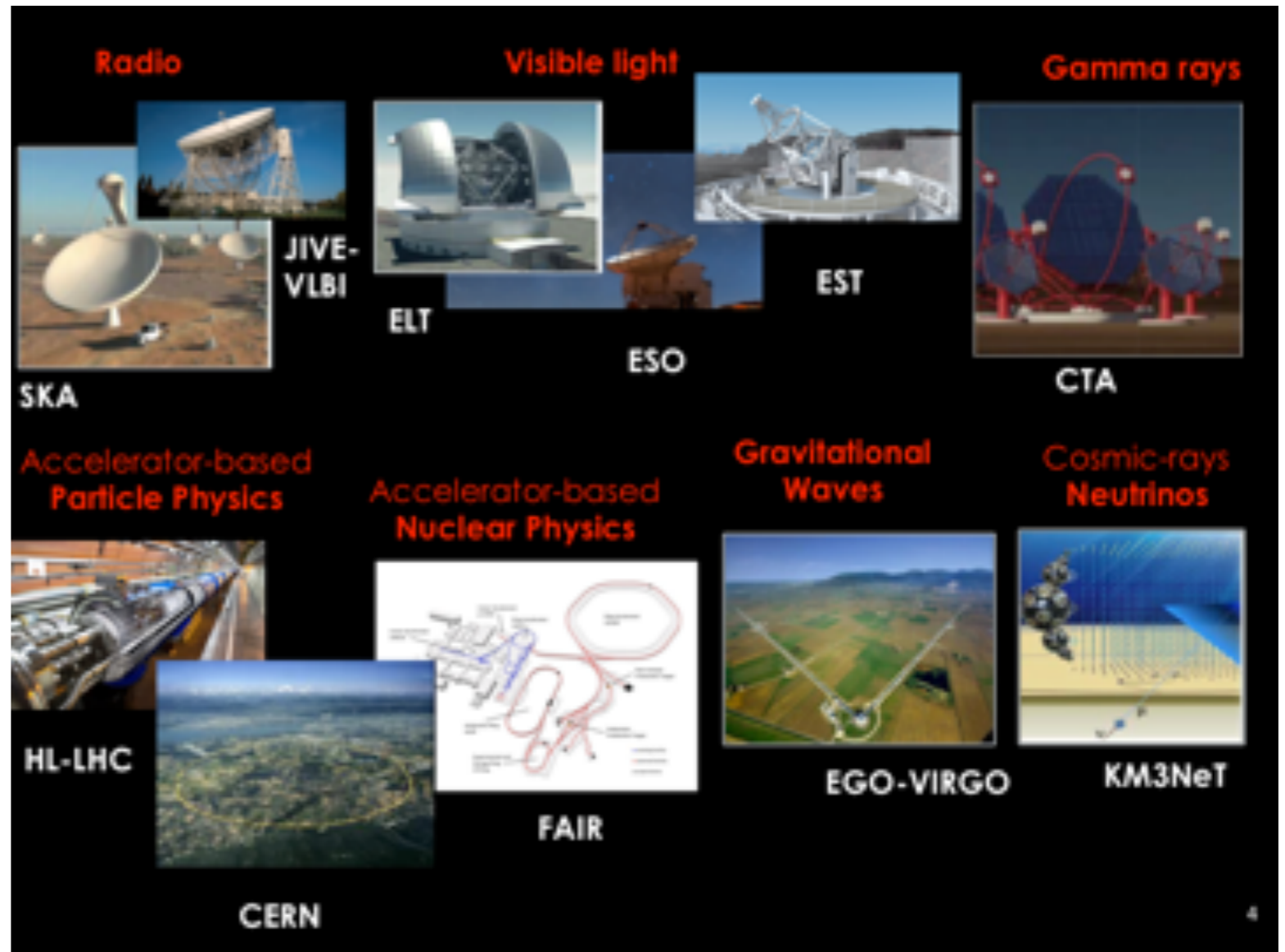


- **Leadership roles at IVOA**
 - Exec, Time Domain IG, DCP, Radio Astronomy
- Expect IVOA activity on science analysis platforms
- **ESCAPE** work in IVOA
- HiPS/MOC, Time Domain, Registry, Provenance, Data Models, Applications

- Continue to play active role in OV-France and ASOV
- Advocate for **Euro-VO** and EOSC consideration in the next ASTRONET Roadmap



□ Astronomy (+) and EOSC



- Connecting the Astronomy / Astroparticle / Accelerator Particle Physics ESFRI and there Research Infrastructures to EOSC
- H2020 project: 2019 — 2023
- CDS leads the Work Package on connection to the VO

5. Next Steps for WP4

Mapped out by the Work Plan (*D4.1*)

- To be adjusted based on progress and evolutions
- Involvement with Test Science Cases (*more interaction across WPs*)

Important focus on training events in 2021

- ...following covid-19 delays that delayed events
- 1st School on Science with Interoperable Data
 - On-line February 8-12, 2021
- Hands-on workshop for data providers
 - On-line June 2021
- 2nd School on Science with Interoperable Data
 - December 2021 (or request to make later with revised project schedule)



□ Projects

- **Euromet 2024** Research Infrastructure (EPN-2024-RI)
 - Small but important CDS participation (~20PM)
- **XMM2ATHENA** (*starting 2021*)
 - A. Neobot science, local coordination by ObAS GALHECOS team
 - ~5PM participation of CDS related to X-matching
- **EOSC Future** - large (~40 M€) project of science and e-Infrastructures
 - Passed 1st step of approval, result hopefully known soon
 - CDS is small part (20 PM) for Test Science Cases and training activities



□ Challenges

Identifying the perimeter of what data to make FAIR

(Reality is — not all data can be made FAIR)

- DMPs are here
- VizieR associated data service - strategic development
 - Fits perfectly the definitions for certified repository as required by DMPs
 - Resource limited !!
 - Possible opportunities with National Fund for Open Science
 - EOSC-Future project may enable visibility of training to astronomers on how to make their data FAIR

□ Challenges

What is the “reference data” from future large missions/ surveys that should be made available at CDS ?

e.g. **Rubin/LSST**


- CDS has pursued approach of “preparing for era of LSST / SKA etc.”
 - LSST@Europe meetings
 - LSST co-authorship with CDS on IVOA standards
 - LSST plans for use of HiPS/MOC
- Proprietary Data rights - problematic for CDS Open Science approach.
- Rough analysis - 32 billion source (classic) catalogue in ~2025 (public phase) is feasible. But we can be much more ambitious...
- **Brokers - Open Data :-)** — CDS collaboration on FINK broker for use of CDS X-Match

□ Challenges

Staffing

- **Senior CNRS researcher transition to Emeritus in 2020**
 - Permanent Researcher FTE (~4.75 now, < 4 in 2021 !!)
 - Targeting CNAP and CNRS recruitments
- **Research Engineer retirement - 2024 !!**
- Bibliography and Documentalist Research engineer retirements 2028, 2029
- **Documentalists** - increased load to be addressed with contractors in 2021 following +1 recruitment in 2020
- Excellent contract Research Engineer reaching contract end in 2021 !!

□ Summary

- **A busy year ahead in 2021**
 - Rest, recuperation, and some Christmas cheer will be very welcome before then!! 
- Challenges of the continuing uncertainty in 2021
- A changed way of working
- Many very exciting things to do in the community
 - A lot of innovations, improved services, and the message of Open Science
- Projects - working well, helping to prepare the future, and connection with the wider world of data sharing and large astronomy projects
- Staff & team support necessary — work together

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